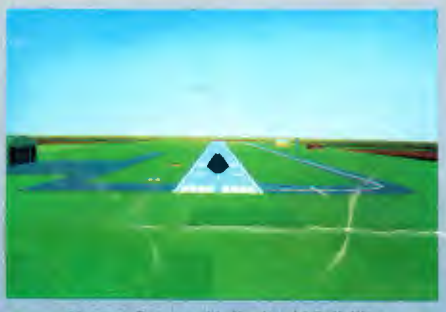
Frasca FVS-2000 Visual System

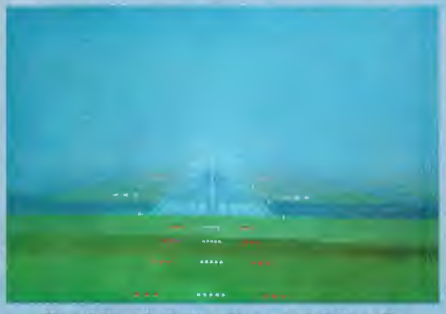
"Taking Simulator Realism To New Heights"

Capable of transforming any instrument trainer into a cost-effective VFR training platform, the FVS-2000 builds on the proven technology of Frasca's family of computer generated visual systems.

Adding the FVS-2000 to a Frasca flight simulator immediately doubles the utility of the trainer for all students. Primary students can perform engine starts on the ramp, taxi to the active runway, execute a visual takeoff and practice VFR flight maneuvers. Advanced students can practice advanced flight maneuvers and the critical transition from an instrument approach to a visual landing under realistic weather minimums.



Airport Scene, Unlimited Visibility



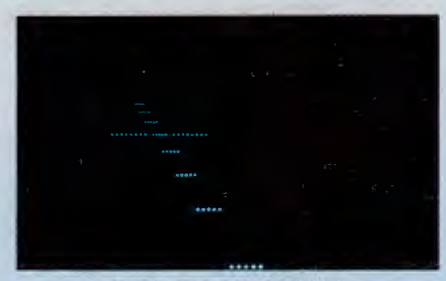
One Mile Visibility, Airport Lighting On

Night, Unlimited Visibility

Image Generation

The out-the-window scenes are generated by a powerful microprocessor-based graphics generator interfaced to the simulator host computer.

A visual data base is included which creates the image of a generic airport and its surrounding area. Custom data bases are also available which create images of specific airports and terrain features.



Night, One Mile Visibility

Half Mile Visibility, Ground Fog

View of Airport Hangars, Half Mile Visibility

Viewing Configurations

The FVS-2000 is available in the following configurations to suit the user's specific requirements (other configurations are available upon special request):

Collimated or Direct View Systems:

Single-channel/single window
Single-channel/two-window
Three-channel/four window

Projection Systems:

Single-channel/flat screen
Three-channel/segmented screen

Each visual channel consists of a graphics generator and one or more visual display units. A visual data base is shared among all channels.

Low Pass, Three Miles Visibility

Low Pass, 3/4 Miles Visibility

View from Taxiway, Dusk

Night View of Airport Vicinity

The Frasca FVS-2000 visual system makes any simulator more productive by helping the instructor become more creative. In the end, the student receives higher quality instruction for significantly lower cost.

FRASCA INTERNATIONAL, INC.

Technical Information

Graphics Generator

The FVS-2000 graphics generator is a proprietary design built around several 32-bit microprocessors and custom programmable array logic (PAL) devices. The graphics generator consists of a general purpose processor, a pixel processor, and three color fill boards (one each for red, blue, and green). In addition to managing the visual data base and controlling the other processors, the general purpose processor handles communications with the interface computer.

Interface Computer

The interface computer provides the data communications interface between the simulator host computer and the graphics generator in each visual channel. The interface computer is built around a high speed 80386-based processor. In addition to handling data communications, the interface computer stores the visual system software and the visual data bases(s) on its internal hard disk.

Visual Data Base

The standard FVS-2000 system includes a generic visual data base consisting of an airport surrounded by a generalized terrain pattern representative of the rural midwestern United States. The airport environment includes such details as:

- 8,100-foot runway with precision approach runway markings
- Multiple taxiways with high speed turnoffs
- Ramp area with three hangar buildings
- Appropriate runway and taxiway lighting
- Multiple approach and VASI light patterns with configurations controlled by the instructor

Display Systems

The direct-view display systems include one or more 19-inch (measured diagonally) high resolution color CRT monitors. These installations include an opaque housing that eliminates the need to operate the simulator in a darkened room. Direct view systems may be optionally equipped with a Fresnel optical lens.

Projection display systems use one or more high resolution video projectors. High-gain projector screens are part of the projection display system.

Collimated beam splitter optics are available in single-window, multi-window juxtaposed, and multi-window zero gap configurations. These display systems provide added depth realism.

Instructor's Controls

The instructor controls the visual system through the menu terminal located in the instructor console. The Visual Menu controls the following visual system characteristics:

Visibility Visibility can be set to between 0 and 40 nautical miles. Visibility is effective only below a cloud layer, if there is one.

Clouds Altitude above ground level for both cloud base and cloud tops are entered to produce a cloud layer. No clouds is also an option.

Day/Night Night operation darkens the visual image, obscuring unlighted objects on the ground.

Approach Lights When one of several approach light configurations is selected, that pattern appears along with runway and taxiway lights.

VASI Lights One of four VASI configurations can be selected, or no VASI implemented. VASI types available are 2-bar, 4-bar, 6-bar and 12-bar.

Airport Locates the visual data base to any geographic position. The instructor enters the identifier of a localizer, VOR or NDB to position the touchdown point of the airport's runway.

Runway Heading This orients the runway's direction, and in effect orients the entire visual data base. Runway heading is automatically set when a localizer identifier is used to locate the airport.

FOR MORE INFORMATION regarding Frasca's product line contact:

FRASCA INTERNATIONAL, INC.
906 East Illini Airport Road
Urbana, Illinois 61801 USA
Telephone: (217) 344-9200
FAX: (217) 344-9207